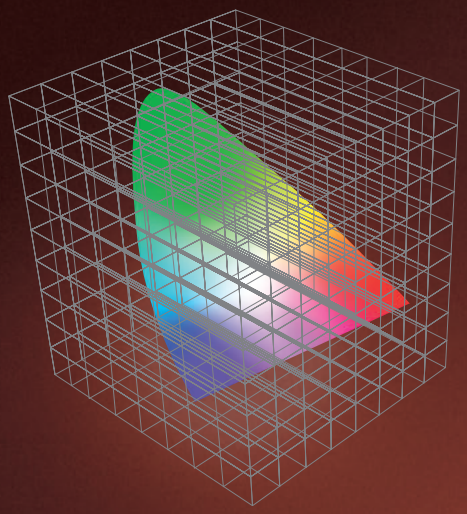
EIZO

ColorEdge®

Color Calibration LCD Monitors



Color as it's meant to be

Professional Color Quality with Precision Calibration

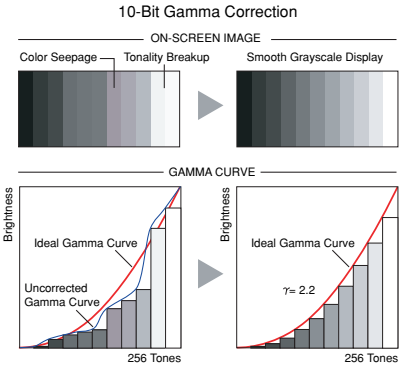
Professionals doing high quality digital imaging in fields such as graphic arts, photography and printing require a monitor with superior color accuracy and color management capabilities. The EIZO ColorEdge CG series offers three monitors that perform to the highest standards. With different sizes, resolutions and functions to meet varied needs, they all provide total assurance of color accuracy because each unit is individually calibrated at the factory. They also come supplied with EIZO's proprietary ColorNavigator™ software, which utilizes a 10- or 12-bit Look-Up Table for fast calibration of brightness, color temperature and gamma. As a result, you enjoy the benefits of soft proofing and on-screen color checking for a more efficient workflow, as well as the convenience of a slim-profile monitor.

The Hardware: Consummate Performance and Functionality

Factory Adjustment Of Gamma

Each ColorEdge monitor is adjusted to a gamma level of 2.2. This is accomplished by measuring the R, G, and B gamma values from 0 – 255, then using the monitor's 10-bit (CG210 and CG19) or 12-bit (CG221) look-up table (LUT) to select the 256 most appropriate tones to achieve the 2.2 value. Users can also set their own values from 1.0 to 2.6 or L* with the ColorNavigator software.

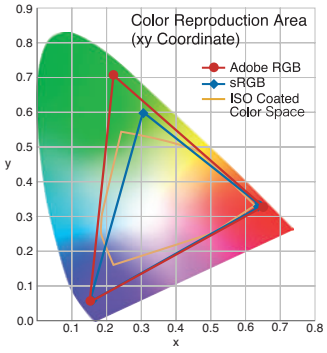
Each monitor adjusted individually at the factory. (For illustrative purposes only. Actual adjustment is performed in a darkroom.)



This is important because accurate, non-fluctuating gamma values are necessary for the proper display of color. If colors are not based on specific values and cannot be adjusted, images will be displayed differently by different monitors. ColorEdge monitors provide both precision and consistency, so graphics professionals can be sure that the final product will look exactly the way they want it to. In fact, each monitor comes with an adjustment certificate that certifies the measurement results of the gamma value.

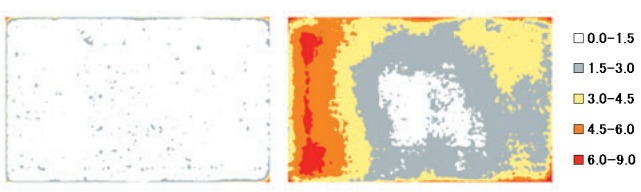
Wide Color Space

The CG221 can reproduce the Adobe RGB color space, meaning it not only covers the sRGB color space supported by many computer monitors, operating systems and digital cameras, but the ISO-coated and US web-coated CMYK color spaces used in printing as well. This makes it possible to achieve a standard color space for all work from photography to printing. The CG210 and CG19 cover a color space approximately equal to sRGB, giving them color reproduction capabilities on par with high-end CRT monitors.



Brightness and Color Uniformity with 12-Bit LUT

Achieving uniform levels of brightness and color across the screen has been all but impossible with LCD monitors. To correct this problem, EIZO has developed an ASIC (Application Specific Integrated Circuit) and incorporated it into the ColorEdge CG221. This ASIC has a 12-bit look-up table (LUT) with an extensive palette of 4,081 grayscale tones for each R, G, and B, and internal calculation accuracy of 16-bits (64 times more accurate than 10-bit internal calculation).

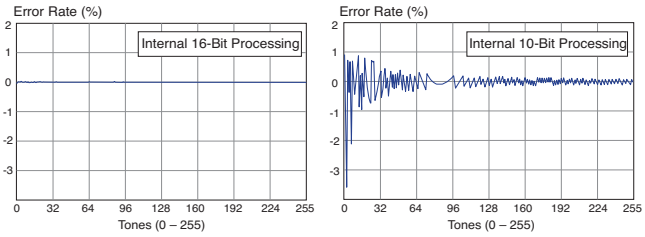


*Color-separated image with Delta-E*ab distribution across the screen (gray level 128 measured)*

16-bit Processing

The CG221's 16-bit internal calculation produces grayscale rendering that is on a par with high-end CRT monitors. The result is not only a much greater degree of detail in dark areas, but overall uniformity of brightness and color throughout the entire screen. (The CG210 and CG19 have 14-bit internal calculation.)

16-bit v. 10-bit processing



With 10-bit processing, the error rate is high in low tonal areas during calculation. With 16-bit processing, accuracy is significantly improved resulting in fewer conversion errors.

Portrait Mode Support for Macintosh and Windows

The ColorEdge CG210 provides built-in support for portrait mode with EIZO's exclusive ActiveRotation II technology. The monitor includes a gravity sensor, so it "knows" when it is being rotated, and changes between portrait and landscape modes accordingly. Because it is hardware-based, ActiveRotation II does not absorb CPU power or compromise graphics performance. It supports Macintosh OS 9/X and Windows 2000/XP platforms.

Graphics board support for ActiveRotation II varies by manufacturer and model. With some graphics boards, it may be necessary to change the resolution on the PC side or restart the computer after rotating the screen. For details on graphics board support, please see www.eizo.com/support/compatibility/

SWOP Certification

The ColorEdge CG210 is part of the SWOP-certified Remote Director — a monitor-based proofing system from Integrated Color Solutions, Inc. SWOP certification means graphics professionals can use this system in place of hardcopy proofs and perform all color checks on-screen.

5-Year Warranty

EIZO and its authorized distributors offer a five-year limited warranty for all ColorEdge monitors.

The Software: Extensive Calibration Capabilities

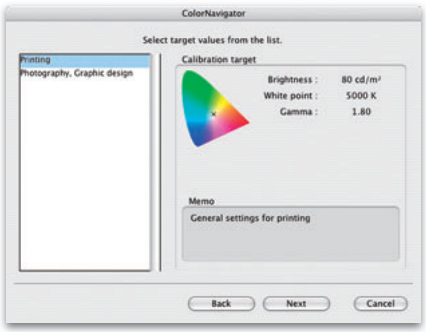
Simple and Precise Calibration

The EIZO-developed ColorNavigator software makes calibration both simple and accurate. Instead of having to judge colors and do time-consuming inputting, or having a specialist do it for you, all you need to do is input target values for brightness, white point and gamma. ColorNavigator works with a wide range of measurement devices to directly utilize the 12- or 10-bit LUT of ColorEdge monitors for accurate and reliable calibration in minutes.

Preset or User-Assigned Values

Preset Values

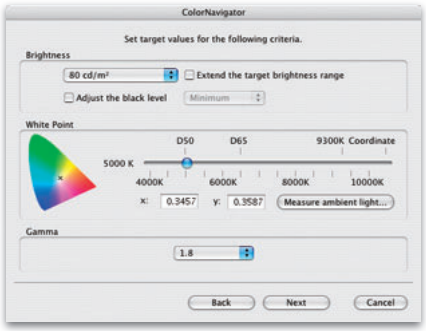
Printing and Photography/Graphic Design settings are available with default values. Just select either one and ColorNavigator will begin calibrating. Ideal for users with limited color management knowledge, this takes the guesswork out of assigning values.



Printing: Brightness=80 cd/m², White Point=5000 K, Gamma=1.8.
Photography/Graphic Design: Brightness=100 cd/m², White Point=6500 K, Gamma=2.2.

User-Assigned Values

Experienced users can assign the desired values for brightness, white point, and gamma and then calibrate.



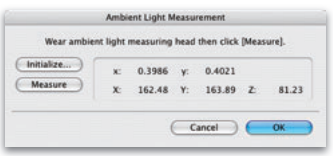
Calibration Parameters

Brightness		30 cd/m² – 200 cd/m²† in 5 cd/m² increments Possible to set to the monitor's maximum and minimum values.
	Black Level	0.5 cd/m² – 3.5 cd/m²‡ in 0.1 cd/m² increments Possible to set to the monitor's minimum value.
White Point	Color Temperature	4,000 K – 10,000 K in 100 K increments
	Color Coordinates	X Value, Y Value
Gamma		1.0 – 2.6 in 0.1 increments and L*

† With the ColorEdge CG221, it may not be possible to set the brightness to the maximum value (200 cd/m²) depending on LCD panel performance.
‡ With the CG19, choosing "6-Color Adjustment" after calibrating will disable the black level function and gamma will only be adjustable from 1.8 to 2.6 in increments of 0.2.

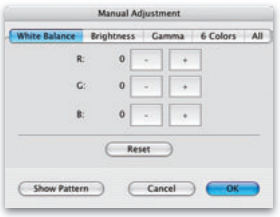
Ambient Light Measurement

ColorNavigator can be used to measure the ambient light environment and automatically set it as the monitor's white point calibration target. Especially helpful when there is no light box to view a proof or when the light box's white point is not precisely on target, it ensures that the monitor's white point matches that of the ambient light environment for an accurate comparison between the hard (printed) and soft proofs.



As of March 2006, this function is supported by GretagMacbeth Eye-One series measurement devices only (excluding Eye-One Monitor/Display).

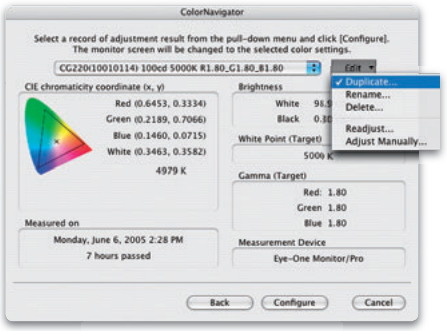
Post-Calibration Color Adjustment



Post-Calibration Manual Adjustment Screen

Sometimes due to variations in output from different printers or the special requirements of a project, it is necessary to fine-tune an otherwise perfectly calibrated monitor to match target colors. ColorNavigator lets you easily adjust hue and saturation for all six colors (red, green, blue, cyan, magenta and yellow), as well as white balance, brightness, black level and gamma, to achieve the closest possible visual match. For confirmation of calibration results or to achieve more accurate manual adjustments, a test pattern screen can now be displayed. The test pattern screen shows a full grayscale ramp as well as just the low tones (blacks), high tones (whites), and gamma values. The results of all manual adjustments are immediately reflected on the test pattern screen.

Convenient Calibration Profile Management



ColorNavigator also makes it easy to keep track of calibration profiles. When you want to adjust a profile in order to match your monitor to other equipment such as printers or light boxes, you can use the Duplicate function to make a copy of it, then adjust the duplicate profile and give it a new name. Naturally, you can make as many duplicates, and thus adjusted profiles, as desired.

Recalibration Reminder

After initial calibration, a monitor needs to be recalibrated at regular intervals to maintain color accuracy. ColorNavigator includes a recalibration reminder that will appear after a certain number of user-determined hours. When the monitor is first calibrated, the date and time are saved. After the time you set has elapsed, an LED on the front panel lights up, and a reminder message appears the next time ColorNavigator starts up. If you prefer to calibrate according to the amount of change that has occurred, you can measure the color difference (Delta-E) between the original target points and the actual current points at any time.

ColorNavigator 4 System Requirements

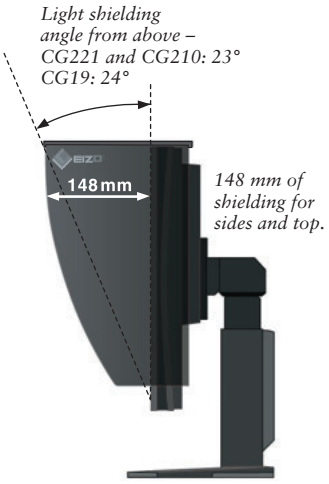
Compatible Operating Systems	Macintosh	Windows
	Mac OS X 10.2 or later OS 9.2.2	Windows XP/2000
Colors	32,000 minimum	
Resolution	1024 × 768 minimum recommended	
Additional Requirements	Apple Macintosh system that fulfills Mac OS X requirements • 128 MB memory minimum • Power Macintosh G3 (Blue & White)/G4/G4 Cube/G5/mini • PowerBook G3 (Bronze Keyboard or later)/G4 • eMac	• PC/AT compatible machine • Pentium compatible CPU (300 MHz minimum, RAM 128 MB minimum)
	Two or more available USB ports	

Accessories

CH1-A

Monitor Hood

EIZO's monitor hoods not only prevent ambient light from reflecting off the screen, but include added conveniences like a sliding top cover and an interior made of anti-glare material. A monitor hood is bundled with the ColorEdge CG221 and CG210, while the CH1-A hood (sold separately) is available for the ColorEdge CG19.

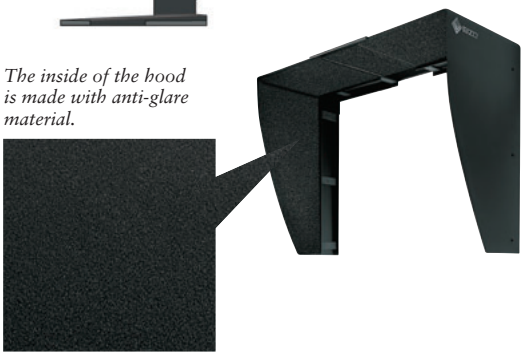


Light shielding angle from above – CG221 and CG210: 23° CG19: 24°

148 mm of shielding for sides and top.

The measuring device can be attached to the monitor and removed with the hood in place via a sliding top cover.

The inside of the hood is made with anti-glare material.



LS-HM1-D

Dual Height Adjustable Stand

The LS-HM1-D holds two monitors of the same or different sizes (excluding the CG221), provides six-stage height adjustment from 0 – 75 mm, supports portrait mode, and offers cable housing in the back. (Sold separately.)

A monitor hood cannot be affixed when monitors are mounted on this stand.

LA-131-D

Flexible Arm

Adjust tilt, swivel, and height for best visibility when you're seated or standing, and when you won't be using the monitor for a while move it completely out of the way. Offers three axes of movement and is available in gray or black. (Sold separately; supports only the CG210 and CG19.)

LA-030-W / LA-011-W

Wall Mount Arms

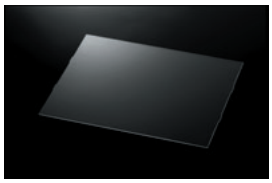
LA-030-W

Mount your monitor on a wall and adjust the screen's position as necessary. The LA-030-W includes three axes of movement, allowing it to be extended more than 500 mm away from or placed against the wall when not in use. The LA-030-W is available in gray or black, and the LA-011-W in black. (Sold separately; support only the CG210 and CG19.)

LA-011-W

FP-901 / FP-702

Panel Protectors



To prevent dust and scratches, EIZO offers the FP-901 and FP-702 protection sheets for the CG210 and CG19 that fit right over the screen surface and leave minimal trace of implementation. (Sold separately.)

ScreenCleaner

Screen Cleaner Kit

Keep your screen free from dust and fingerprints with this screen cleaner kit. Includes pump spray and cloth. (Bundled with CG221 and CG210.)

ColorNavigator Compatible Measurement Devices

ColorEdge Monitors support the following measurement devices*.

GretagMacbeth	
Eye-One Series	
X-Rite	
MonacoOPTIX^{XR}	MonacoOPTIX^{XR}Pro
ColorVision	
Spyder2	Spyder2Pro

** For optimum calibration results with the ColorEdge CG221, a GretagMacbeth Eye-One spectrophotometer is recommended. For more information about Eye-one products, please visit www.i1color.com.*

			ColorEdge® CG221	ColorEdge® CG210	ColorEdge® CG19
Panel	**Panel Size and Type**		56.4 cm (22.2") TFT color LCD panel	54 cm (21.3") TFT color LCD panel	48 cm (19") TFT color LCD panel
	Viewing Angles (H, V)		170°, 170° (at contrast ratio of 10:1)	170°, 170° (at contrast ratio of 10:1)	170°, 170° (at contrast ratio of 10:1)
	Brightness / Contrast		200 cd/m² / 400:1	300 cd/m² / 550:1	280 cd/m² / 450:1
	Response Time		30 ms (typical)	30 ms (typical)	20 ms (typical)
	Native Resolution		1920 × 1200	1600 × 1200	1280 × 1024
	Active Display Size (H × V)		479 × 299 mm	432 × 324 mm	376 × 301 mm
	Viewable Image Size		Diagonal: 563 mm	Diagonal: 540 mm	Diagonal: 481 mm
	Pixel Pitch		0.249 × 0.249 mm	0.270 × 0.270 mm	0.294 × 0.294 mm
	Display Colors		16.77 million from a palette of 68 billion	16.77 million from a palette of 1.06 billion	16.77 million from a palette of 1.06 billion
Cabinet Colors			Black	Gray, Black	Gray, Black
Dot Clock			Analog: 202.5 MHz, Digital: 162 MHz	Analog: 202.5 MHz, Digital: 162 MHz	Analog: 135 MHz, Digital: 108 MHz
Scanning Frequency (H, V)		**Analog**	31 – 94 kHz, 49 – 86 Hz	24 – 100 kHz, 49 – 86 Hz	30 – 82 kHz, 49 – 86 Hz
		Digital	31 – 76 kHz, 59 – 61 Hz (VGA Text: 69 – 71 Hz)	31 – 100 kHz, 59 – 61 Hz (VGA Text: 69 – 71 Hz)	30 – 65 kHz, 59 – 61 Hz (VGA Text: 69 – 71 Hz)
Input Signals			Analog: RGB Analog, Digital: DVI Standard 1.0	Analog: RGB Analog, Digital: DVI Standard 1.0	Analog: RGB Analog, Digital: DVI Standard 1.0
Input Terminals			DVI-I 29 pin × 2 (switchable)	DVI-I 29 pin × 2 (switchable)	DVI-I 29 pin × 2 (switchable)
USB Port / Standard			1 upstream, 2 downstream / USB Standard Rev. 2.0	1 upstream, 2 downstream / USB Standard Rev. 2.0	1 upstream, 2 downstream / USB Standard Rev. 2.0
Plug & Play			VESA DDC 2B	VESA DDC 2B	VESA DDC 2B
Power	**Power Requirements**		AC 100 – 120 V, 200 – 240 V: 50 / 60 Hz	AC 100 – 120 V, 200 – 240 V: 50 / 60 Hz	AC 100 – 120 V, 200 – 240 V: 50 / 60 Hz
	Power Consumption		100 W (typical)	75 W (typical)	60 W (typical)
	Power Save Mode		Less than 2 W	Less than 2 W	Less than 3 W
Physical Specifications	**Height Adjustment Range90**		90 mm	82 mm	100 mm
	Tilt / Swivel / Pivot		30° Up, 3° Down / 35° Right, 35° Left / –	40° Up, 0° Down / 35° Right, 35° Left / 90°	40° Up, 1° Down / 35° Right, 35° Left / 90°
	Dimensions (W × H × D)		With Stand: 565 × 452.5 – 552.5 × 272 mm Without Stand: 565 × 394.5 × 101 mm	With Stand: 472 × 459 – 541 × 208.5 mm Without Stand: 472 × 373 × 69 mm	With Stand: 414 × 409.5 – 509.5 × 202.7 mm Without Stand: 414 × 340 × 64 mm
	Net Weight		With Stand: 14.5 kg, Without Stand: 10.4 kg	With Stand: 10.2 kg, Without Stand: 7.0 kg	With Stand: 8.1 kg, Without Stand: 5.8 kg
Auto Brightness Functions			Auto Brightness Stabilization	Auto Brightness Stabilization	Auto Brightness Stabilization
Auto Adjustment Functions			Auto Adjustment, Range Adjustment	Auto Adjustment, Range Adjustment	Auto Adjustment, Range Adjustment
Display Mode Options			Fine Contrast (sRGB, Custom, Calibration, Emulation)	Fine Contrast (sRGB, Custom, Calibration)	Fine Contrast (sRGB, Custom, Calibration)
Hardware Portrait Display Function			–	ActiveRotation II	–
ScreenManager OSD Adjustment Functions	**Screen Adjustment**		Clock, Phase, Position, Resolution, Signal Filter, Screen Size (full screen, enlarge, normal), Smoothing (5 stages), Border Intensity	Clock, Phase, Position, Resolution, Brightness, Signal Filter, Screen Size (full screen, enlarge, normal), Smoothing (5 stages), Border Intensity	Clock, Phase, Position, Resolution, Brightness, Signal Filter, Screen Size (full screen, enlarge, normal), Smoothing (5 stages), Border Intensity
	Color Adjustment		Range Adjustment (RGB) Independent 6-Color Control, Gamma, Temperature (500 K increments from 4,000 K – 10,000 K), Saturation, Hue, Gain, Reset	Range Adjustment (RGB), Independent 6-Color Control, Gamma, Temperature (500 K increments from 4,000 K – 10,000 K), Saturation, Hue, Gain, Reset	Range Adjustment (RGB), Independent 6-Color Control, Gamma, Temperature (500 K increments from 4,000 K - 10,000 K), Saturation, Hue, Gain, Reset
	Power Save Settings	**Analog**	PowerManager (VESA DPMS), Off Timer	PowerManager (VESA DPMS), Off Timer	PowerManager (VESA DPMS, EIZO MPMS), Off Timer
		Digital	PowerManager (DVI DMPM), Off Timer	PowerManager (DVI DMPM), Off Timer	PowerManager (DVI DMPM), Off Timer
	Other Settings		Signal Settings, Input Priority, Product Information (product name, serial number, resolution, operating time), OSD Menu Settings, Adjustment Lock, Languages (English, French, German, Italian, Japanese, Spanish, Swedish), Reset	Signal Settings, Input Priority, Product Information (product name, serial number, resolution, operating time), OSD Menu Settings, Adjustment Lock, Languages (English, French, German, Italian, Japanese, Spanish, Swedish), ActiveRotation II, Reset	Signal Settings, Input Priority, Product Information (product name, serial number, resolution, operating time), OSD Menu Settings, Adjustment Lock, Languages (English, French, German, Italian, Japanese, Spanish, Swedish), Reset
Certifications and Standards			c-Tick, CE, CB, UL (cTÜVus), CSA (cTÜVus), FCC-B, Canadian ICES-003-B, TÜV/S, VCCI-B, RoHS, WEEE, EIZO Eco Products 2004,	TCO'03 (gray), TCO'99 (black) TÜV/Ergonomics (including ISO 13406-2), TÜV/GS, c-Tick, CE, CB, UL (cTÜVus), CSA (cTÜVus), FCC-B, Canadian ICES-003-B, TÜV/S, VCCI-B, EPA ENERGY STAR®, RoHS, WEEE, EIZO Eco Products 2004, CCC	TCO'03 (gray), TCO'99 (black), TÜV/Ergonomics (including ISO 13406-2), TÜV/GS, c-Tick, CE, CB, UL (cTÜVus), CSA (cTÜVus), FCC-B, Canadian ICES-003-B, TÜV/S, VCCI-B, RoHS, WEEE, EIZO Eco Products 2002, CCC
Supplied Accessories			AC power cord, signal cables (DVI-D – DVI-D, DVI-I – D-Sub mini 15 pin), USB cable, setup guide, EIZO LCD Utility Disk (ColorNavigator software, HTML user's manual, ICC Profile), adjustment certificate, ScreenCleaner, monitor hood, quick reference, warranty registration card	AC power cord, signal cables (DVI-D – DVI-D, DVI-I – D-Sub mini 15 pin), USB cable, setup guide, EIZO LCD Utility Disk (ColorNavigator software, HTML user's manual, ICC Profile), adjustment certificate, ScreenCleaner, monitor hood, quick reference, warranty registration card	AC power cord, signal cables (DVI-D – DVI-D, DVI-I – D-Sub mini 15 pin), USB cable, setup guide, EIZO LCD Utility Disk (ColorNavigator software, HTML user's manual, ICC Profile), adjustment certificate, quick reference, warranty registration card
Warranty			Five Years*	Five Years*	Five Years*

** The usage time is limited to 30,000 hours and the warranty period of the LCD panel is limited to three years from the date of purchase for all monitors in this brochure. For the CG210 and CG19, the warranty period of the backlight is limited tto three years from the date of purchase, but brightness deterioration is not covered. For the CG221, the warranty period of the backlight is warranted only if the monitor is used within the recommended brightness of up to and including 100 cd/m² with a color temperature between 5,000 K - 6,500 K and limited to three years from the date of purchase subject to the usage time being less than or equal to 10,000 hours.*
With current LCD technology, a panel may contain a limited number of missing or flickering pixels.

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